

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A Method method for the treatment of hair, comprising

[[ - ]]applying a composition onto hair, wherein the composition comprises at least one first active principle or first active complex, selected among or formed from compounds, which are, alone or in combination with further compounds, capable, after application to hair and after the carrying out of the treatment of hair described in the following, to provide a shape memory effect, and wherein the composition comprises at least one second active principle, selected among cationic agents;

[[ - ]]previously, at the same time or subsequent to the application of the composition, bringing the hair into a desired shape (permanent memory shape) and

[[ - ]]fixing the memory shape subsequently by inducing a chemical or physical change of the applied agents;

wherein, after a desired or undesired deformation of the memory shape, the initial memory shape can be recalled by means of a physical stimulation.

2. (original) A method according to claim 1, characterized in that the composition comprises at least two active principles, which alone do not show or only show weak shape memory properties and which, after the combined application to hair in accordance with the method according to claim 1, provide hair with a synergistically increased shape memory effect.

3. (currently amended) ~~A Method~~ method according to claim 1, wherein

[[ - ]]the first active principle is a crosslinkable macromer, which forms after crosslinking a shape memory polymer, wherein the macromer comprises

- a) crosslinkable segments, which are crosslinkable by means of a chemical reaction[[ , ]]; and
- b) thermoplastic segments, which are not chemically crosslinkable[[ , ]];

[[ - ]]wherein the memory shape is fixed by means of the chemical crosslinking of the macromer and the therewith associated forming of the shape memory polymer, and wherein the shape memory polymer possesses at least one transition temperature  $T_{trans}$ .

4. (currently amended) ~~A Method~~ method for hair treatment, wherein

[[ - ]]a programmed hairdo (permanent shape) obtained in accordance with the method of claim 3, is warmed to a temperature above  $T_{trans}$ ,

[[ - ]]wherein the hair is then brought into a second (temporary) shape and wherein the second shape is fixed by means of cooling to a temperature below  $T_{trans}$ .

5. (currently amended) ~~A Method~~ method according to claim 3[[ or 4]], characterized in that the crosslinkable macromer is selected among compounds of the general formula



wherein A1 and A2 designate reactive, chemically crosslinkable groups and wherein -  
(X)<sub>n</sub> - designates a divalent, thermoplastic polymer or oligomer segment.

6. (currently amended) ~~A Method~~ method according to claim 5, characterized in that the crosslinkable macromer is selected among polyesters, oligoesters, polyalkylene glycols, oligoalkylene glycols, polyalkylene carbonates and oligoalkylene carbonates substituted with at least two acrylate groups or methacrylate groups.

7. (currently amended) ~~A Method~~ method according to claim 6, characterized in that the crosslinkable macromer is selected among poly( $\epsilon$ -caprolactone)-dimethacrylate, poly(DL-lactide)-methacrylate, poly(L-lactide-co-glycolide)-dimethacrylate, poly(ethyleneglycol) dimethacrylate, poly(propylenglycol) dimethacrylate, PEG-block-PPG-block-PEG-dimethacrylate, poly(ethylenadipate)-dimethacrylate, hexamethylencarbonate-dimethacrylate.

8. (currently amended) ~~A Method~~ method in accordance with ~~any of the preceding claims~~ claim 1, characterized in that the composition comprises additionally one macromer having only one terminal or side chain chemically reactive group.

9. (currently amended) ~~A Method~~ method according to claim 1, wherein

[[ - ]]the first active principle is a shape memory polymer, which comprises

- a) at least one hard segment which can be crosslinked by means of physical interactions, having a first transition temperature  $T'_{trans}$ , which lies above room temperature, and
- b) at least one soft segment having a second transition temperature  $T_{trans}$  which lies below  $T'_{trans}$ , and

[[ - ]] wherein the memory shape is fixed by means of a physical crosslinking of the shape memory polymers.

10. (currently amended) ~~A Method~~ method according to claim 9, wherein the shaping of the hairs occurs under warming to a temperature of at least  $T'_{trans}$  and wherein the subsequent fixation of the hairdo occurs by means of cooling to a temperature below  $T'_{trans}$ .

11. (currently amended) ~~A Method~~ method for hair treatment, wherein

[[ - ]] a programmed hairdo (permanent shape) obtained in accordance with a method according to claim[[s]] 9[[ or 10]], is warmed to a temperature between  $T'_{trans}$  and  $T_{trans}$ ;

[[ - ]] wherein the hair is then brought into a second (temporary) shape and

[[ - ]] wherein the second shape is fixed by means of cooling to a temperature below  $T_{trans}$ .

12. (currently amended) ~~A Method~~ method for reprogramming of a hairdo (permanent shape) obtained in accordance with the method according to claim 9 into a new permanent shape, wherein

[[ - ]]the is hairdo is warmed to a temperature above  $T'_{trans}$ ,

[[ - ]]followed by bringing the hair into a new shape, and

[[ - ]]followed by fixing the new shape by means of cooling to a temperature below  $T'_{trans}$ .

13. (currently amended) ~~A Method~~ method in accordance with ~~any of claims 9 to 12~~ claim 9, characterized in that the shape memory polymer possesses a degree of crystallinity of from 3 to 80% and wherein the ratio of the moduli of elasticity below and above  $T_{trans}$  is at least 20.

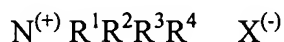
14. (currently amended) ~~A Method~~ method according to ~~any of claims 9 to 13~~ claim 9, characterized in that the shape memory polymer is a copolyester urethane.

15. (currently amended) ~~A Method~~ method according to claim 14, characterized in that the shape memory polymer is the reaction product of (a) two different macrodiols, selected among  $\alpha,\omega$ -dihydroxypolyesters,  $\alpha,\omega$ -dihydroxyoligoesters,  $\alpha,\omega$ -dihydroxypoly lactones and  $\alpha,\omega$ -dihydroxyoligolactones, and (b) at least one diisocyanate.

16. (currently amended) A Method method for the recovery of a programmed hairdo (permanent shape) obtained by ~~one of the method~~[[s]] according to claim[[s]] 1, 3, ~~9 or 12~~, wherein the hairdo in a temporary shape according to claim 4 ~~or claim 11~~ or in the shape of a hairdo obtained by cold forming, is warmed to a temperature above  $T_{trans}$ .

17. (currently amended) A Method method according to ~~any of the preceding claims~~ claim 1, characterized in that the cationic, second active principle is selected among surfactants having cationic groups or groups which can be rendered cationic, polymers having cationic groups or groups which may be rendered cationic, silicone compounds having cationic groups or groups which can be rendered cationic, cationic protein derivatives, cationic protein hydrolysates and betain.

18. (currently amended) A Method method according to claim 17, characterized in that the cationic surfactant is selected among compounds of the general formula



wherein  $R^1$  to  $R^4$ , independently, designate aliphatic groups, aromatic groups, alkoxy groups, polyoxy alkylene groups, alkylamido groups, hydroxyalkyl groups, alkaryl groups or aryl groups having 1 to 22 carbons atoms, wherein the alkyl groups may be linear, branched or cyclic and wherein at least one of the groups possesses at least 8 carbon atoms and wherein  $X^-$  represents an anion.

19. (currently amended) ~~A Method~~ method according to claim 17, characterized in that the cationic polymer is selected among methylvinylimidazoliumchloride/vinylpyrrolidon-copolymers, quarternized vinylpyrrolidon/dimethylaminoethylmethacrylate-copolymers, dimethyldiallylammoniumchloride/sodiumacrylate/acrylamide-copolymers, vinylpyrrolidon/dimethylaminoethylmethacrylate/vinylcaprolactam-copolymers, vinylpyrrolidon/methacrylamidopropyltrimethylammoniumchloride-copolymers, cationic polysaccharide derivatives, chitosan, chitosan salts, chitosan derivatives.

20. (currently amended) ~~A Method~~ method in accordance with ~~any of the preceding claims~~ claim 1, characterized in that the composition comprises the first active principle in an amount from 0.01 to 25 wt% and the second active principle in an amount of from 0.01 to 25 wt%.

21. (currently amended) ~~A Hair~~ hair cosmetic composition, comprising in a suitable cosmetic medium an active complex, wherein the active complex comprises at least one first active principle, selected among compounds which are, alone or in combination with further compounds, capable to, after application to hair and after carrying out a method according to ~~any of claims 1 to 20~~ claim 1, to provide the hair with a shape memory effect and wherein the active complex comprises at least one second active principle, selected among cationic agents.

22. (currently amended) ~~A Composition~~ composition according to claim 21,

characterized in that the first active principle is either

a macromer which can be crosslinked to a shape memory polymer, wherein the crosslinked shape memory polymer possesses at least one transition temperature  $T_{trans}$ , and wherein the macromer comprises

- a) crosslinkable segments, which are crosslinkable by means of chemical bonds, and
- b) thermoplastic segments, which are not chemically crosslinkable;

and/or a shape memory polymer, which comprises

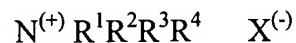
[[a)] A] at least one hard segment which may be crosslinked by means of physical interactions, having a first transition temperature  $T'_{trans}$ , which lies above room temperature, and

[[b)] B] at least one soft segment having a second transition temperature  $T_{trans}$ , which lies below  $T'_{trans}$ ;

and wherein the second active principle is selected among surfactants having cationic groups or groups which may be rendered cationic, polymers having cationic groups or groups which may be rendered cationic, silicone compounds having cationic groups or groups which may be rendered cationic, cationic protein derivatives, cationic proteinhydrolysate derivatives and betain.



23. (currently amended) ~~A Composition~~ composition according to claim 22, characterized in that the cationic surfactant is selected among compounds of the general formula



wherein R<sup>1</sup> to R<sup>4</sup>, independently, designate aliphatic groups, aromatic groups, alkoxy groups, polyoxy alkylene groups, alkylamido groups, hydroxyalkyl groups, alkaryl groups or aryl groups having 1 to 22 carbons atoms, wherein the alkyl groups may be linear, branched or cyclic and wherein at least one of the groups possesses at least 8 carbon atoms and wherein X<sup>-</sup> represents an anion.

24. (currently amended) ~~A Composition~~ composition according to claim 22, characterized in that the cationic polymer is selected among methylvinylimidazoliumchloride/vinylpyrrolidon-copolymers, quarternized vinylpyrrolidon/dimethylaminoethylmethacrylate-copolymers, dimethyldiallylammoniumchloride/sodiumacrylate/acrylamide-copolymers, vinylpyrrolidon/dimethylaminoethylmethacrylate/vinylcaprolactam-copolymers, vinylpyrrolidon/methacrylamidopropyltrimethylammoniumchloride-copolymers, cationic polysaccharide derivatives, chitosan, chitosan salts, chitosan derivatives.

25. (currently amended) ~~A Composition~~ composition according to [[any of claims 21 to 24]] claim 22, characterized in that the shape memory polymer is contained in an amount of from 0.01 to 25 wt% and wherein the cationic agent is contained in an amount of from 0.01 to 25 wt%.

26. (currently amended) ~~A Composition~~ composition according to ~~any of claims 21 to 25~~ claim 21, characterized in that at least two active principles are contained, which show alone no or only weak shape memory properties but which, after combined application onto hair according to claim 1, provide a synergistically increased shape memory effect.

27. (currently amended) ~~A Cosmetic~~ cosmetic preparation, comprising a composition according to ~~any of claims 21 to 26~~ claim 21, characterized in that the preparation is present in the form of a lotion, a spray lotion, a cream, a gel, a gelfoam and aerolsprays, a non-aerosolspray, and aerosolfoam, a non-aerosolfoam, a O/W- or W/O emulsion, a micro emulsion or a hair wax.

28. (currently amended) ~~A Preparation~~ preparation according to claim 27, characterized in that additionally 0.01 to 25 wt% of at least one active principle are contained, selected among hair conditioning agents, hair fixative agents and hair coloring agents.

**Please add the following new claim:**

29. (new) A method for the recovery of a programmed hairdo (permanent shape) obtained by the method according to claim 1, wherein the hairdo in a temporary shape according to claim 11 or in the shape of a hairdo obtained by cold forming, is warmed to a temperature above  $T_{trans}$ .